

SEQUENCE LISTING

<110> Lees, Ann M.
 Lees, Robert S.
 Law, Simon W.
 Arjona, Anibal A.

<120> NOVEL LOW DENSITY LIPOPROTEIN BINDING
 PROTEINS AND THEIR USE IN DIAGNOSING AND TREATING
 ATHEROSCLEROSIS

<130> 10797-004001

<140> US 09/616,289

<141> 2000-07-14

<150> US 09/517,849

<151> 2000-03-02

<150> US 08/979,608

<151> 1997-11-26

<150> US 60/031,930

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<151> 1997-06-03

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<213> Oryctolagus cuniculus

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Gly	Gln	Ala	Gly	Pro	Asp	Glu	Gly	Glu	Val	Asp	Ser	Cys	Leu	Arg	Gln
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Gly	Asn	Met	Thr	Ala	Ala	Leu	Gln	Ala	Ala	Leu	Lys	Asn	Pro	Pro	Ile
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Lys	Val	Leu	Ile	Ser	Phe	Lys	Ala	Gly	Asp	Ile	Glu	Lys	Ala	Val	Gln
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Ser	Leu	Asp	Arg	Asn	Gly	Val	Asp	Leu	Leu	Met	Lys	Tyr	Ile	Tyr	Lys
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Gly	Phe	Glu	Ser	Pro	Ser	Asp	Asn	Ser	Ser	Ala	Val	Leu	Leu	Gln	Trp
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His	Glu	Lys	Ala	Leu	Ala	Ala	Gly	Gly	Val	Gly	Ser	Ile	Val	Arg	Val
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10023529-121701

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Tyr Leu Gly Gly Ser Ser Gly Ala Gly Gly Arg Leu Thr Arg Gly Arg
35 40 45
Val Gln Gly Leu Leu Glu Glu Glu Ala Ala Ala Arg Gly Arg Leu Glu
50 55 60
Arg Thr Arg Leu Gly Ala Leu Ala Leu Pro Arg Gly Asp Arg Pro Gly
65 70 75 80
Arg Ala Pro Pro Ala Ala Ser Ala Arg Ala Ala Arg Asn Lys Arg Ala
85 90 95
Gly Glu Glu Arg Val Leu Glu Lys Glu Glu Glu Glu Glu Glu Glu
100 105 110
Asp Asp Glu Asp Asp Asp Asp Val Val Ser Glu Gly Ser Glu Val
115 120 125
Pro Glu Ser Asp Arg Pro Ala Gly Ala Gln His His Gln Leu Asn Gly
130 135 140
Gly Glu Arg Gly Pro Gln Thr Ala Lys Glu Arg Ala Lys Glu Trp Ser
145 150 155 160
Leu Cys Gly Pro His Pro Gly Gln Glu Glu Gly Arg Gly Pro Ala Ala
165 170 175
Gly Ser Gly Thr Arg Gln Val Phe Ser Met Ala Ala Leu Ser Lys Glu
180 185 190
Gly Gly Ser Ala Ser Ser Thr Thr Gly Pro Asp Ser Pro Ser Pro Val
195 200 205
Pro Leu Pro Pro Gly Lys Pro Ala Leu Pro Gly Ala Asp Gly Thr Pro
210 215 220
Phe Gly Cys Pro Ala Gly Arg Lys Glu Lys Pro Ala Asp Pro Val Glu
225 230 235 240
Trp Thr Val Met Asp Val Val Glu Tyr Phe Thr Glu Ala Gly Phe Pro
245 250 255
Glu Gln Ala Thr Ala Phe Gln Glu Gln Glu Ile Asp Gly Lys Ser Leu
260 265 270
Leu Leu Met Gln Arg Thr Asp Val Leu Thr Gly Leu Ser Ile Arg Leu
275 280 285
Gly Pro Ala Leu Lys Ile Tyr Glu His His Ile Lys Val Leu Gln Gln
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10033529-121701

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<213> *Oryctolagus cuniculus*

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 Asp Asp Asp Val Val Ser Glu Gly Ser Glu Val Pro Glu Ser Asp Arg
 35 40 45
 Pro Ala Gly Ala Gln His His Gln Leu Asn Gly Gly Glu Arg Gly Pro
 50 55 60
 Gln Thr Ala Lys Glu Arg Ala Lys Glu Trp Ser Leu Cys Gly Pro His
 65 70 75 80
 Pro Gly Gln Glu Glu Gly Arg Gly Pro Ala Ala Gly Ser Gly Thr Arg
 85 90 95
 Gln Val Phe Ser Met Ala Ala Leu Ser Lys Glu Gly Gly Ser Ala Ser
 100 105 110
 Ser Thr Thr Gly Pro Asp Ser Pro Ser Pro Val Pro Leu Pro Pro Gly
 115 120 125
 Lys Pro Ala Leu Pro Gly Ala Asp Gly Thr Pro Phe Gly Cys Pro Ala
 130 135 140
 Gly Arg Lys Glu Lys Pro Ala Asp Pro Val Glu Trp Thr Val Met Asp
 145 150 155 160
 Val Val Glu Tyr Phe Thr Glu Ala Gly Phe Pro Glu Gln Ala Thr Ala
 165 170 175
 Phe Gln Glu Gln Glu Ile Asp Gly Lys Ser Leu Leu Leu Met Gln Arg
 180 185 190
 Thr Asp Val Leu Thr Gly Leu Ser Ile Arg Leu Gly Pro Ala Leu Lys
 195 200 205
 Ile Tyr Glu His His Ile Lys Val Leu Gln Gln Gly His Phe Glu Asp
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 Asp Asp Pro Glu Gly Phe Leu Gly
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<213> *Oryctolagus cuniculus*

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 Asp Glu Asp Asp Asp Asp Val Val Ser Glu Gly Ser Glu Val Pro
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 Glu Ser Asp Arg Pro Ala Gly Ala Gln His His Gln Leu Asn Gly Gly
 65 70 75 80
 Glu Arg Gly Pro Gln Thr Ala Lys Glu Arg Ala Lys Glu Trp Ser Leu
 85 90 95
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FOOTNOTES 12701

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Arg	Pro	Gly	Arg	Pro	Ala	Pro	Ala	Arg	Glu	Ala	Glu	Gly	Ala	Ser	Ser	
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Gly	Ala	Leu	Cys	Asp	Val	Ser	Glu	Glu	Leu	Ser	Arg	Gln	Leu	Glu	Asp	
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Ile	Leu	Ser	Thr	Tyr	Cys	Val	Asp	Asn	Asn	Gln	Gly	Ala	Pro	Gly	Glu	
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Ile	Arg	Thr	Ser	Asp	Glu	Val	Gly	Asp	Arg	Asp	His	Arg	Arg	Pro	Gln	
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Gln	Thr	Leu	Asn	Thr	Leu	Ser	Thr	Pro	Glu	Glu	Lys	Leu	Ala	Ala	Leu	
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Cys	Lys	Lys	Tyr	Ala	Glu	Leu	Leu	Glu	Glu	His	Arg	Asn	Ser	Gln	Lys	
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Val Thr Ser His Phe Gln Met Thr Leu Asn Asp Ile Gln Leu Gln Met
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 Glu Gln His Asn Glu Arg Asn Ser Lys Leu Arg Gln Glu Asn Met Glu
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 Leu Ala Glu Arg Leu Lys Lys Leu Ile Glu Gln Tyr Glu Leu Arg Glu
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 Glu His Ile Asp Lys Val Phe Lys His Lys Asp Leu Gln Gln Gln Leu
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 Val Asp Ala Lys Leu Gln Gln Ala Gln Glu Met Leu Lys Glu Ala Glu
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 Glu Arg His Gln Arg Glu Lys Asp Phe Leu Leu Lys Glu Ala Val Glu
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 Ser Gln Arg Met Cys Glu Leu Met Lys Gln Gln Glu Thr His Leu Lys
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 405 410 415
 Lys Met Thr Lys Lys Ile Lys Lys Leu Glu Lys Glu Thr Thr Met Tyr
 420 425 430
 Arg Ser Arg Trp Glu Ser Ser Asn Lys Ala Leu Leu Glu Met Ala Glu
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 Glu Lys Thr Leu Arg Asp Lys Glu Leu Glu Gly Leu Gln Val Lys Ile
 450 455 460
 Gln Arg Leu Glu Lys Leu Cys Arg Ala Leu Gln Thr Glu Arg Asn Asp
 465 470 475 480
 Leu Asn Lys Arg Val Gln Asp Leu Ser Ala Gly Gly Gln Gly Pro Val
 485 490 495
 Ser Asp Ser Gly Pro Glu Arg Arg Pro Glu Pro Ala Thr Thr Ser Lys
 500 505 510
 Glu Gln Gly Val Glu Gly Pro Gly Ala Gln Val Pro Asn Ser Pro Arg
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 35 40 45
 Gly Asn Met Thr Ala Ala Leu Gln Ala Ala Leu Lys Asn Pro Pro Ile
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 Asn Thr Lys Ser Gln Ala Val Lys Asp Arg Ala Gly Ser Ile Val Leu
 65 70 75 80
 Lys Val Leu Ile Ser Phe Lys Ala Asn Asp Ile Glu Lys Ala Val Gln
 85 90 95
 Ser Leu Asp Lys Asn Gly Val Asp Leu Leu Met Lys Tyr Ile Tyr Lys
 100 105 110

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 Leu Thr Ala Arg Lys Thr Val
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 35 40 45
 Pro Gln Ser Ala Lys Glu Arg Val Lys Glu Trp Thr Pro Cys Gly Pro
 50 55 60
 His Gln Gly Gln Asp Glu Gly Arg Gly Pro Ala Pro Gly Ser Gly Thr
 65 70 75 80
 Arg Gln Val Phe Ser Met Ala Ala Met Asn Lys Glu Gly Gly Thr Ala
 85 90 95
 Ser Val Ala Thr Gly Pro Asp Ser Pro Ser Pro Val Pro Leu Pro Pro
 100 105 110
 Gly Lys Pro Ala Leu Pro Gly Ala Asp Gly Thr Pro Phe Gly Cys Pro
 115 120 125
 Pro Gly Arg Lys Glu Lys Pro Ser Asp Pro Val Glu Trp Thr Val Met
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 Asp Val Val Glu Tyr Phe Thr Glu Ala Gly Phe Pro Glu Gln Ala Thr
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 Ala Phe Gln Glu Gln Glu Ile Asp Gly Lys Ser Leu Leu Leu Met Gln
 165 170 175
 Arg Thr Asp Val Leu Thr Gly Leu Ser Ile Arg Leu Gly Pro Ala Leu
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 Ser Gln Ala Pro Arg Lys Pro Glu Gly Ala Gln Ala Arg Thr Ala Gln
 35 40 45
 Ser Gly Ala Leu Arg Asp Val Ser Glu Glu Leu Ser Arg Gln Leu Glu
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 Asp Ile Leu Ser Thr Tyr Cys Val Asp Asn Asn Gln Gly Gly Pro Gly

10023539 13701

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Glu	Lys	Lys	Lys	Ala	Lys	Gly	Leu	Gly	Lys	Glu	Ile	Thr	Leu	Leu	Met	
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Gln	Thr	Leu	Asn	Thr	Leu	Ser	Thr	Pro	Glu	Lys	Leu	Ala	Ala	Leu		
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Cys	Lys	Lys	Tyr	Ala	Glu	Leu	Leu	Glu	His	Arg	Asn	Ser	Gln	Lys		
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Glu	Glu	Gly	Val	Gln	Arg	Ala	Arg	Glu	Glu	Glu	Glu	Lys	Arg	Lys	Glu	
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Val	Thr	Ser	His	Phe	Gln	Val	Thr	Leu	Asn	Asp	Ile	Gln	Leu	Gln	Met	
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Val	Asp	Ala	Lys	Leu	Gln	Gln	Ala	Gln	Glu	Met	Leu	Lys	Glu	Ala	Glu	
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Glu	Arg	His	Gln	Arg	Glu	Lys	Asp	Phe	Leu	Leu	Lys	Glu	Ala	Val	Glu	
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Gln	Gln	Leu	Ala	Leu	Tyr	Thr	Glu	Lys	Phe	Glu	Glu	Phe	Gln	Asn	Thr	
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Glu	Tyr	Asp	Glu	Asn	Lys	Phe	Val	Asp	Glu	Glu	Asp	Gly	Gly	Asp	Gly	
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Gln	Ala	Gly	Pro	Asp	Glu	Gly	Glu	Val	Asp	Ser	Cys	Leu	Arg	Gln	Gly	
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Asn	Met	Thr	Ala	Ala	Leu	Gln	Ala	Ala	Leu	Lys	Asn	Pro	Pro	Ile	Asn	
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Thr	Arg	Ser	Gln	Ala	Val	Lys	Asp	Arg	Ala	Gly	Ser	Ile	Val	Leu	Lys	
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gtg	ctc	atc	tcc	ttc	aag	gcc	ggc	gac	ata	gaa	aag	gcc	gtg	cag	tcc	348
Val	Leu	Ile	Ser	Phe	Lys	Ala	Gly	Asp	Ile	Glu	Lys	Ala	Val	Gln	Ser	
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ctg	gac	agg	aac	ggc	gtg	gac	ctg	ctc	atg	aag	tac	atc	tac	aag	ggc	396
Leu	Asp	Arg	Asn	Gly	Val	Asp	Leu	Leu	Met	Lys	Tyr	Ile	Tyr	Lys	Gly	
			100				105					110				
ttc	gaq	aqc	ccc	tcc	gac	aac	aqc	aqc	gcc	gtg	ctc	ctg	cag	tgg	cac	444

Phe Glu Ser Pro Ser Asp Asn Ser Ser Ala Val Leu Leu Gln Trp His
115 120 125

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130 135 140 145

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Thr Ala Arg Lys Thr Val
150

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Arg Ala Gly Gly Pro Ala Arg Pro Val Ser Leu Arg Glu Val Val Arg
20 25 30

tac ctc ggg ggt agc agc ggc gct ggc ggc cgc ctg acc cgc ggc cgc 144
Tyr Leu Gly Gly Ser Ser Gly Ala Gly Gly Arg Leu Thr Arg Gly Arg
35 40 45

gtg cag ggt ctg ctg gaa gag gag gcg gcg gcg cgg ggc cgc ctg gag 192
Val Gln Gly Leu Leu Glu Glu Glu Ala Ala Ala Arg Gly Arg Leu Glu
50 55 60

cgc acc cgt ctc gga gcg ctt gcg ctg ccc cgc ggg gac agg ccc gga 240
Arg Thr Arg Leu Gly Ala Leu Ala Leu Pro Arg Gly Asp Arg Pro Gly
65 70 75

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cgg gcg cca ccg gcc gcc agc gcc cgc gcg gcg cgg aac aag aga gct 288
 Arg Ala Pro Pro Ala Ala Ser Ala Arg Ala Ala Arg Asn Lys Arg Ala
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 ggc gag gag cga gtg ctt gaa aag gag gag gag gag gag gag gag gaa 336
 Gly Glu Glu Arg Val Leu Glu Lys Glu Glu Glu Glu Glu Glu Glu Glu
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 gac gac gag gac gac gac gac gac gtc gtg tcc gag ggc tcg gag gtg 384
 Asp Asp Glu Asp Asp Asp Asp Asp Val Val Ser Glu Gly Ser Glu Val
 115 120 125
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 Pro Glu Ser Asp Arg Pro Ala Gly Ala Gln His His Gln Leu Asn Gly
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 Gly Glu Arg Gly Pro Gln Thr Ala Lys Glu Arg Ala Lys Glu Trp Ser
 145 150 155
 ctg tgt ggc ccc cac cct ggc cag gag gaa ggg cgg ggg ccg gcc gcg 528
 Leu Cys Gly Pro His Pro Gly Gln Glu Glu Gly Arg Gly Pro Ala Ala
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 Gly Ser Gly Thr Arg Gln Val Phe Ser Met Ala Ala Leu Ser Lys Glu
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 Gly Gly Ser Ala Ser Ser Thr Thr Gly Pro Asp Ser Pro Ser Pro Val
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 cct ttg ccc ccc ggg aag cca gcc ctc cca gga gcc gat ggg acc ccc 672
 Pro Leu Pro Pro Gly Lys Pro Ala Leu Pro Gly Ala Asp Gly Thr Pro
 210 215 220
 ttt ggc tgc cct gcc ggg cgc aaa gag aag ccg gca gac ccc gtg gag 720
 Phe Gly Cys Pro Ala Gly Arg Lys Glu Lys Pro Ala Asp Pro Val Glu
 225 230 235
 tgg aca gtc atg gac gtc gtg gag tac ttc acc gag gcg ggc ttc cct 768
 Trp Thr Val Met Asp Val Val Glu Tyr Phe Thr Glu Ala Gly Phe Pro
 240 245 250 255
 gag caa gcc acg gct ttc cag gag cag gag atc gac ggc aag tcc ctg 816
 Glu Gln Ala Thr Ala Phe Gln Glu Gln Glu Ile Asp Gly Lys Ser Leu
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 ctg ctc atg cag cgc acc gat gtc ctc acc ggc ctg tcc atc cgc ctg 864
 Leu Leu Met Gln Arg Thr Asp Val Leu Thr Gly Leu Ser Ile Arg Leu
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 Gly Pro Ala Leu Lys Ile Tyr Glu His His Ile Lys Val Leu Gln Gln
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 ggt cac ttc gag gac gat gac ccg gaa ggc ttc ctg gga tgagcacaga 961

1003323-1701
 TOTAL 6252001

Gly His Phe Glu Asp Asp Asp Pro Glu Gly Phe Leu Gly
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<213> Oryctolagus cuniculus

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 Leu Glu Lys Glu Glu Glu Glu Glu Glu Glu Glu Asp Asp Glu Asp Asp
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gac gac gac gtc gtg tcc gag ggc tgc gag gtg ccc gag agc gat cgt 144
 Asp Asp Asp Val Val Ser Glu Gly Ser Glu Val Pro Glu Ser Asp Arg
 35 40 45

ccc gcg ggt gcg cag cat cac cag ctg aat ggc ggc gag cgc ggc ccg 192
 Pro Ala Gly Ala Gln His His Gln Leu Asn Gly Gly Glu Arg Gly Pro
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cag acc gcc aag gag cgg gcc aag gag tgg tgc ctg tgt ggc ccc cac 240
 Gln Thr Ala Lys Glu Arg Ala Lys Glu Trp Ser Leu Cys Gly Pro His
 65 70 75 80

cct ggc cag gag gaa ggg cgg ggg ccg gcc gcg ggc agt ggc acc cgc 288
 Pro Gly Gln Glu Glu Gly Arg Gly Pro Ala Ala Gly Ser Gly Thr Arg
 85 90 95

cag gtg ttc tcc atg gcg gcc ttg agt aag gag ggg gga tca gcc tct 336
 Gln Val Phe Ser Met Ala Ala Leu Ser Lys Glu Gly Gly Ser Ala Ser
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 Ser Thr Thr Gly Pro Asp Ser Pro Ser Pro Val Pro Leu Pro Pro Gly
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 Gly Arg Lys Glu Lys Pro Ala Asp Pro Val Glu Trp Thr Val Met Asp
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gtc gtg gag tac ttc acc gag gcg ggc ttc cct gag caa gcc acg gct 528
 Val Val Glu Tyr Phe Thr Glu Ala Gly Phe Pro Glu Gln Ala Thr Ala
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ttc cag gag cag gag atc gac ggc aag tcc ctg ctg ctc atg cag cgc 576
 Phe Gln Glu Gln Glu Ile Asp Gly Lys Ser Leu Leu Leu Met Gln Arg
 180 185 190

acc gat gtc ctc acc ggc ctg tcc atc cgc ctg ggg cca gcg ttg aaa 624
 Thr Asp Val Leu Thr Gly Leu Ser Ile Arg Leu Gly Pro Ala Leu Lys
 195 200 205

atc tat gag cac cat atc aag gtg ctg cag cag ggt cac ttc gag gac 672
 Ile Tyr Glu His His Ile Lys Val Leu Gln Gln Gly His Phe Glu Asp
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 Asp Asp Pro Glu Gly Phe Leu Gly
 225 230

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1003529 12101

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gag agc gat cgt ccc gcg ggt gcg cag cat cac cag ctg aat ggc ggc Glu Ser Asp Arg Pro Ala Gly Ala Gln His His Gln Leu Asn Gly Gly 65 70 75 80	240
gag cgc ggc ccg cag acc gcc aag gag cgg gcc aag gag tgg tcg ctg Glu Arg Gly Pro Gln Thr Ala Lys Glu Arg Ala Lys Glu Trp Ser Leu 85 90 95	288
tgt ggc ccc cac cct ggc cag gag gaa ggg cgg ggg ccg gcc gcg ggc Cys Gly Pro His Pro Gly Gln Glu Glu Gly Arg Gly Pro Ala Ala Gly 100 105 110	336
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ggc tgc cct gcc ggg cgc aaa gag aag ccg gca gac ccc gtg gag tgg Gly Cys Pro Ala Gly Arg Lys Glu Lys Pro Ala Asp Pro Val Glu Trp 165 170 175	528
aca gtc atg gac gtc gtg gag tac ttc acc gag gcg ggc ttc cct gag Thr Val Met Asp Val Val Glu Tyr Phe Thr Glu Ala Gly Phe Pro Glu 180 185 190	576
caa gcc acg gct ttc cag gag cag gag atc gac ggc aag tcc ctg ctg Gln Ala Thr Ala Phe Gln Glu Gln Glu Ile Asp Gly Lys Ser Leu Leu 195 200 205	624
ctc atg cag cgc acc gat gtc ctc acc ggc ctg tcc atc cgc ctg ggc Leu Met Gln Arg Thr Asp Val Leu Thr Gly Leu Ser Ile Arg Leu Gly 210 215 220	672
cca gcg ttg aaa atc tat gag cac cat atc aag gtg ctg cag cag ggt Pro Ala Leu Lys Ile Tyr Glu His His Ile Lys Val Leu Gln Gln Gly 225 230 235 240	720
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<400> 14

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Met Lys Asn Gln Asp Lys Lys Asn Gly Ala Ala Lys Gln Pro Asn Pro
  1                      5                      10                      15

aaa agc agc ccg gga cag ccg gaa gca gga gcg gag gga gcc cag ggg 156
Lys Ser Ser Pro Gly Gln Pro Glu Ala Gly Ala Glu Gly Ala Gln Gly
      20                      25                      30

cgg ccc ggc cgg ccg gcc ccc gcc cga gaa gcc gaa ggt gcc agc agc 204
Arg Pro Gly Arg Pro Ala Pro Ala Arg Glu Ala Glu Gly Ala Ser Ser
      35                      40                      45

cag gct ccc ggg agg ccg gag ggg gct caa gcc aaa act gct cag cct 252
Gln Ala Pro Gly Arg Pro Glu Gly Ala Gln Ala Lys Thr Ala Gln Pro
      50                      55                      60

ggg gcg ctc tgt gat gtc tct gag gag ctg agc cgc cag ttg gaa gac 300
Gly Ala Leu Cys Asp Val Ser Glu Glu Leu Ser Arg Gln Leu Glu Asp
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ata ctc agt aca tac tgt gtg gac aac aac cag ggg gcc ccg ggt gag 348
Ile Leu Ser Thr Tyr Cys Val Asp Asn Asn Gln Gly Ala Pro Gly Glu
      85                      90                      95

gat ggg gtc cag ggt gag ccc cct gaa cct gaa gat gca gag aag tct 396
Asp Gly Val Gln Gly Glu Pro Pro Glu Pro Glu Asp Ala Glu Lys Ser
      100                      105                      110

cgc gcc tat gtg gca agg aat ggg gag ccg gag ccg ggc acc cca gta 444
Arg Ala Tyr Val Ala Arg Asn Gly Glu Pro Glu Pro Gly Thr Pro Val
      115                      120                      125

gtc aat ggc gag aag gag acc tcc aag gca gag ccg ggc acg gaa gag 492
Val Asn Gly Glu Lys Glu Thr Ser Lys Ala Glu Pro Gly Thr Glu Glu

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cag aca ctg aac acg ctg agc acc cca gag gag aag ctg gcg gct ctg Gln Thr Leu Asn Thr Leu Ser Thr Pro Glu Glu Lys Leu Ala Ala Leu 180 185 190			636
tgc aag aag tat gcg gaa ctg ctc gag gag cac cgg aac tcg cag aag Cys Lys Lys Tyr Ala Glu Leu Leu Glu Glu His Arg Asn Ser Gln Lys 195 200 205			684
cag atg aag ctg ctg cag aag aag cag agc cag ctg gtg cag gag aag Gln Met Lys Leu Leu Gln Lys Lys Gln Ser Gln Leu Val Gln Glu Lys 210 215 220			732
gac cac ctg cgt gcc gag cac agc aag gcc atc ctg gcc cgc agc aag Asp His Leu Arg Gly Glu His Ser Lys Ala Ile Leu Ala Arg Ser Lys 225 230 235 240			780
ctc gag agc ctg tgc cgg gag ctg cag cgg cac aac cgc tcg ctc aag Leu Glu Ser Leu Cys Arg Glu Leu Gln Arg His Asn Arg Ser Leu Lys 245 250 255			828
gaa gaa ggt gtg cag cga gcc cga gag gag gag gag aag cgc aag gag Glu Glu Gly Val Gln Arg Ala Arg Glu Glu Glu Glu Lys Arg Lys Glu 260 265 270			876
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gag cag cac aac gag cgc aac tcc aag ctg cgc cag gag aac atg gag Glu Gln His Asn Glu Arg Asn Ser Lys Leu Arg Gln Glu Asn Met Glu 290 295 300			972
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gag cac atc gac aaa gtc ttc aaa cac aag gat ctg cag cag cag ctg Glu His Ile Asp Lys Val Phe Lys His Lys Asp Leu Gln Gln Gln Leu 325 330 335			1068
gtg gac gcc aag ctc cag cag gcc cag gag atg ctg aag gag gca gag Val Asp Ala Lys Leu Gln Gln Ala Gln Glu Met Leu Lys Glu Ala Glu 340 345 350			1116
gag cgg cac cag cgg gag aag gac ttt ctc ctg aag gag gcc gtg gag Glu Arg His Gln Arg Glu Lys Asp Phe Leu Leu Lys Glu Ala Val Glu 355 360 365			1164

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 Ser Gln Arg Met Cys Glu Leu Met Lys Gln Gln Glu Thr His Leu Lys
 370 375 380

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 Gln Gln Leu Ala Leu Tyr Thr Glu Lys Phe Glu Glu Phe Gln Asn Thr
 385 390 395 400

ctt tcc aaa agc agc gag gtg ttc acc aca ttc aaa cag gaa atg gaa 1308
 Leu Ser Lys Ser Ser Glu Val Phe Thr Thr Phe Lys Gln Glu Met Glu
 405 410 415

aag atg aca aag aag atc aag aag ctg gag aaa gag acc acc atg tac 1356
 Lys Met Thr Lys Lys Ile Lys Lys Leu Glu Lys Glu Thr Thr Met Tyr
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cgt tcc cgg tgg gag agc agc aac aag gcc ctg ctt gag atg gct gag 1404
 Arg Ser Arg Trp Glu Ser Ser Asn Lys Ala Leu Leu Glu Met Ala Glu
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gag aaa aca ctc cgg gac aaa gag ctg gaa ggc ctg cag gtg aaa atc 1452
 Glu Lys Thr Leu Arg Asp Lys Glu Leu Glu Gly Leu Gln Val Lys Ile
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 Gln Arg Leu Glu Lys Leu Cys Arg Ala Leu Gln Thr Glu Arg Asn Asp
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ctg aac aag agg gtg cag gac ctg agt gcc ggt ggc cag ggc ccc gtc 1548
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Met
1

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Ser Lys Asn Thr Val Ser Ser Ala Arg Phe Arg Lys Val Asp Val Asp	
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Glu Tyr Asp Glu Asn Lys Phe Val Asp Glu Glu Asp Gly Gly Asp Gly	
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cag gcc ggg ccc gac gag ggc gag gtg gac tcc tgc ctg cgg caa gga	264
Gln Ala Gly Pro Asp Glu Gly Glu Val Asp Ser Cys Leu Arg Gln Gly	
35 40 45	
aac atg aca gct gcc cta cag gca gct ctg aag aac ccc cct atc aac	312
Asn Met Thr Ala Ala Leu Gln Ala Ala Leu Lys Asn Pro Pro Ile Asn	
50 55 60 65	
acc aag agt cag gca gtg aag gac cgg gca ggc agc att gtc ttg aag	360
Thr Lys Ser Gln Ala Val Lys Asp Arg Ala Gly Ser Ile Val Leu Lys	
70 75 80	
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Val Leu Ile Ser Phe Lys Ala Asn Asp Ile Glu Lys Ala Val Gln Ser	
85 90 95	
ctg gac aag aat ggt gtg gat ctc cta atg aag tat att tat aaa gga	456
Leu Asp Lys Asn Gly Val Asp Leu Leu Met Lys Tyr Ile Tyr Lys Gly	
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Phe Glu Ser Pro Ser Asp Asn Ser Ser Ala Met Leu Leu Gln Trp His	
115 120 125	
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Thr Ala Arg Lys Thr Val	
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 Pro Gln Ser Ala Lys Glu Arg Val Lys Glu Trp Thr Pro Cys Gly Pro
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Glu Arg Pro Ser Gln Ala Ala Pro Ala Val Glu Ala Glu Gly Pro Gly
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agc agc cag gct cct cgg aag ccg gag ggg gct caa gcc aga acg gct 143
Ser Ser Gln Ala Pro Arg Lys Pro Glu Gly Ala Gln Ala Arg Thr Ala
35 40 45

cag tct ggg gcc ctt cgt gat gtc tct gag gag ctg agc cgc caa ctg 191
Gln Ser Gly Ala Leu Arg Asp Val Ser Glu Glu Leu Ser Arg Gln Leu
50 55 60

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 Lys Ser Arg Thr Tyr Val Ala Arg Asn Gly Glu Pro Glu Pro Thr Pro
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 gta gtc tat gga gag aag gaa ccc tcc aag ggg gat cca aac aca gaa 383
 Val Val Tyr Gly Glu Lys Glu Pro Ser Lys Gly Asp Pro Asn Thr Glu
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 Glu Ile Arg Gln Ser Asp Glu Val Gly Asp Arg Asp His Arg Arg Pro
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 Gln Glu Lys Lys Lys Ala Lys Gly Leu Gly Lys Glu Ile Thr Leu Leu
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1002529 12704

530

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			20					25					30		

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 260 265 270
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 325 330 335
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10023529 12101

385 390 395 400
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 Ala Ser Val Ala Thr Gly Pro Asp Ser Pro Ser Pro Val Pro Leu Pro
 420 425 430
 Pro Gly Lys Pro Ala Leu Pro Gly Ala Asp Gly Thr Pro Phe Gly Cys
 435 440 445
 Pro Pro Gly Arg Lys Glu Lys Pro Ser Asp Pro Val Glu Trp Thr Val
 450 455 460
 Met Asp Val Val Glu Tyr Phe Thr Glu Ala Gly Phe Pro Glu Gln Ala
 465 470 475 480
 Thr Ala Phe Gln Glu Gln Glu Ile Asp Gly Lys Ser Leu Leu Leu Met
 485 490 495
 Gln Arg Thr Asp Val Leu Thr Gly Leu Ser Ile Arg Leu Gly Pro Ala
 500 505 510
 Leu Lys Ile Tyr Glu His His Ile Lys Val Leu Gln Gln Gly His Phe
 515 520 525
 Glu Asp Asp Asp Pro Asp Gly Phe Leu Gly
 530 535

<210> 44
 <211> 546
 <212> PRT
 <213> Homo sapiens

<400> 44
 Met Lys Asn Gln Asp Lys Lys Asn Gly Ala Ala Lys Gln Ser Asn Pro
 1 5 10 15
 Lys Ser Ser Pro Gly Gln Pro Glu Ala Gly Pro Glu Gly Ala Gln Glu
 20 25 30
 Arg Pro Ser Gln Ala Ala Pro Ala Val Glu Ala Glu Gly Pro Gly Ser
 35 40 45
 Ser Gln Ala Pro Arg Lys Pro Glu Gly Ala Gln Ala Arg Thr Ala Gln
 50 55 60
 Ser Gly Ala Leu Arg Asp Val Ser Glu Glu Leu Ser Arg Gln Leu Glu
 65 70 75 80
 Asp Ile Leu Ser Thr Tyr Cys Val Asp Asn Asn Gln Gly Gly Pro Gly
 85 90 95
 Glu Asp Gly Ala Gln Gly Glu Pro Ala Glu Pro Glu Asp Ala Glu Lys
 100 105 110
 Ser Arg Thr Tyr Val Ala Arg Asn Gly Glu Pro Glu Pro Thr Pro Val
 115 120 125
 Val Asn Gly Glu Lys Glu Pro Ser Lys Gly Asp Pro Asn Thr Glu Glu
 130 135 140
 Ile Arg Gln Ser Asp Glu Val Gly Asp Arg Asp His Arg Arg Pro Gln
 145 150 155 160
 Glu Lys Lys Lys Ala Lys Gly Leu Gly Lys Glu Ile Thr Leu Leu Met
 165 170 175
 Gln Thr Leu Asn Thr Leu Ser Thr Pro Glu Glu Lys Leu Ala Ala Leu
 180 185 190
 Cys Lys Lys Tyr Ala Glu Leu Leu Glu Glu His Arg Asn Ser Gln Lys
 195 200 205
 Gln Met Lys Leu Leu Gln Lys Lys Gln Ser Gln Leu Val Gln Glu Lys
 210 215 220
 Asp His Leu Arg Gly Glu His Ser Lys Ala Val Leu Ala Arg Ser Lys
 225 230 235 240
 Leu Glu Ser Leu Cys Arg Glu Leu Gln Arg His Asn Arg Ser Leu Lys

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245 250 255
 Glu Glu Gly Val Gln Arg Ala Arg Glu Glu Glu Lys Arg Lys Glu
 260 265 270
 Val Thr Ser His Phe Gln Val Thr Leu Asn Asp Ile Gln Leu Gln Met
 275 280 285
 Glu Gln His Asn Glu Arg Asn Ser Lys Leu Arg Gln Glu Asn Met Glu
 290 295 300
 Leu Ala Glu Arg Leu Lys Lys Leu Ile Glu Gln Tyr Glu Leu Arg Glu
 305 310 315 320
 Glu His Ile Asp Lys Val Phe Lys His Lys Asp Leu Gln Gln Gln Leu
 325 330 335
 Val Asp Ala Lys Leu Gln Gln Ala Gln Glu Met Leu Lys Glu Ala Glu
 340 345 350
 Glu Arg His Gln Arg Glu Lys Asp Phe Leu Leu Lys Glu Ala Val Glu
 355 360 365
 Ser Gln Arg Met Cys Glu Leu Met Lys Gln Gln Glu Thr His Leu Lys
 370 375 380
 Gln Gln Leu Ala Leu Tyr Thr Glu Lys Phe Glu Glu Phe Gln Asn Thr
 385 390 395 400
 Leu Ser Lys Ser Ser Glu Val Phe Thr Thr Phe Lys Gln Glu Met Glu
 405 410 415
 Lys Met Thr Lys Lys Ile Lys Lys Leu Glu Lys Glu Thr Thr Met Tyr
 420 425 430
 Arg Ser Arg Trp Glu Ser Ser Asn Lys Ala Leu Leu Glu Met Ala Glu
 435 440 445
 Glu Lys Thr Val Arg Asp Lys Glu Leu Glu Gly Leu Gln Val Lys Ile
 450 455 460
 Gln Arg Leu Glu Lys Leu Cys Arg Ala Leu Gln Thr Glu Arg Asn Asp
 465 470 475 480
 Leu Asn Lys Arg Val Gln Asp Leu Ser Ala Gly Gly Gln Gly Ser Leu
 485 490 495
 Thr Asp Ser Gly Pro Glu Arg Arg Pro Glu Gly Pro Gly Ala Gln Ala
 500 505 510
 Pro Ser Ser Pro Arg Val Thr Glu Ala Pro Cys Tyr Pro Gly Ala Pro
 515 520 525
 Ser Thr Glu Ala Ser Gly Gln Thr Gly Pro Gln Glu Pro Thr Ser Ala
 530 535 540
 Arg Ala
 545

<210> 45
 <211> 1614
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(1614)

<400> 45
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 Met Ala Gly Pro Pro Ala Leu Pro Pro Pro Glu Thr Ala Ala Ala Ala
 1 5 10 15

48

acc acg gcg gcc gcc gcc tcg tcg tcc gcc gct tcc ccg cac tac caa
 Thr Thr Ala Ala Ala Ala Ser Ser Ser Ala Ala Ser Pro His Tyr Gln
 20 25 30

96

10036529 1614

gag tgg atc ctg gac acc atc gac tgc ctg cgc tgc cgc aag gcg cgg	144
Glu Trp Ile Leu Asp Thr Ile Asp Ser Leu Arg Ser Arg Lys Ala Arg	
35 40 45	
ccg gac ctg gag cgc atc tgc cgg atg gtg cgg cgg cgc cac ggc ccg	192
Pro Asp Leu Glu Arg Ile Cys Arg Met Val Arg Arg Arg His Gly Pro	
50 55 60	
gag ccg gag cgc acg cgc gcc gag ctc gag aaa ctg atc cag cag cgc	240
Glu Pro Glu Arg Thr Arg Ala Glu Leu Glu Lys Leu Ile Gln Gln Arg	
65 70 75 80	
gcc gtg ctc cgg gtc agc tac aag ggg agc atc tgc tac cgc aac gcg	288
Ala Val Leu Arg Val Ser Tyr Lys Gly Ser Ile Ser Tyr Arg Asn Ala	
85 90 95	
gcg cgc gtc cag ccg ccc cgg cgc gga gcc acc ccg ccg gcc ccg ccg	336
Ala Arg Val Gln Pro Pro Arg Arg Gly Ala Thr Pro Pro Ala Pro Pro	
100 105 110	
cgc gcc ccc cgc ggg gcc ccc gcc gcc gcc gcc gcc gcc gcc ccg ccg	384
Arg Ala Pro Arg Gly Ala Pro Ala Ala Ala Ala Ala Ala Ala Pro Pro	
115 120 125	
ccc acg ccc gcc ccg ccg cca ccg ccc gcg ccc gtc gcc gcc gcc gcc	432
Pro Thr Pro Ala Pro Pro Pro Pro Pro Ala Pro Val Ala Ala Ala Ala	
130 135 140	
ccg gcc cgg gcg ccc cgc gcg gcc gcc gcc gcc gcc aca gcg ccc ccc	480
Pro Ala Arg Ala Pro Arg Ala Ala Ala Ala Ala Thr Ala Pro Pro	
145 150 155 160	
tgc cct ggc ccc gcg cag ccg ggc ccc cgc gcg cag ccg gcc gcg ccc	528
Ser Pro Gly Pro Ala Gln Pro Gly Pro Arg Ala Gln Arg Ala Ala Pro	
165 170 175	
ctg gcc gcg ccg ccg ccc gcg cca gcc gct ccc ccg gcg gtg gcg ccc	576
Leu Ala Ala Pro Pro Pro Ala Pro Ala Ala Pro Pro Ala Val Ala Pro	
180 185 190	
ccg gcc ggc ccg cgc cgc gcc ccc ccg ccc gcc gtc gcc gcc ccg gag	624
Pro Ala Gly Pro Arg Arg Ala Pro Pro Pro Ala Val Ala Ala Arg Glu	
195 200 205	
ccg ccg ctg ccg ccg ccg cca cag ccg ccg gcg ccg cca cag cag cag	672
Pro Pro Leu Pro Pro Pro Pro Gln Pro Pro Ala Pro Pro Gln Gln Gln	
210 215 220	
cag ccg ccg ccg ccg cag cca cag ccg ccg ccg gag ggg ggc gcg gtg	720
Gln Pro Pro Pro Pro Gln Pro Gln Pro Pro Pro Glu Gly Gly Ala Val	
225 230 235 240	
cgg gcc ggc ggc gcg gcg cgg ccc gtg agc ctg ccg gaa gtc gtg cgc	768
Arg Ala Gly Gly Ala Ala Arg Pro Val Ser Leu Arg Glu Val Val Arg	
245 250 255	

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tac ctc ggg ggc agc ggc ggc gcc ggc ggt cgc cta acc cgc ggc cgc Tyr Leu Gly Gly Ser Gly Gly Ala Gly Gly Arg Leu Thr Arg Gly Arg 260 265 270	816
gtg cag ggg ctg ctg gag gag gag gcg gcg gct cga ggc cgt ctg gag Val Gln Gly Leu Leu Glu Glu Glu Ala Ala Ala Arg Gly Arg Leu Glu 275 280 285	864
cgc acc cgt ctc gga gcg ctt gcg ctg ccc cgc ggg gac agg ccc gga Arg Thr Arg Leu Gly Ala Leu Ala Leu Pro Arg Gly Asp Arg Pro Gly 290 295 300	912
cgg gcg ccg ccg gcc gcc agc gcc cgc ccg tct cgc agc aag aga ggt Arg Ala Pro Pro Ala Ala Ser Ala Arg Pro Ser Arg Ser Lys Arg Gly 305 310 315 320	960
gga gaa gag cga gta ctt gag aaa gaa gag gaa gaa gat gat gat gaa Gly Glu Glu Arg Val Leu Glu Lys Glu Glu Glu Glu Asp Asp Asp Glu 325 330 335	1008
gat gaa gat gaa gaa gat gat gtg tca gag ggc tct gaa gtg ccc gag Asp Glu Asp Glu Glu Asp Asp Val Ser Glu Gly Ser Glu Val Pro Glu 340 345 350	1056
agt gac cgt cct gca ggt gcc cag cac cac cag ctt aac ggc gag cgg Ser Asp Arg Pro Ala Gly Ala Gln His His Gln Leu Asn Gly Glu Arg 355 360 365	1104
gga cct cag agt gcc aag gag agg gtc aag gag tgg acc ccc tgc gga Gly Pro Gln Ser Ala Lys Glu Arg Val Lys Glu Trp Thr Pro Cys Gly 370 375 380	1152
ccg cac cag ggc cag gat gaa ggg ccg ggg cca gcc ccg ggc agc ggc Pro His Gln Gly Gln Asp Glu Gly Arg Gly Pro Ala Pro Gly Ser Gly 385 390 395 400	1200
acc cgc cag gtg ttc tcc atg gca gcc atg aac aag gaa ggg gga aca Thr Arg Gln Val Phe Ser Met Ala Ala Met Asn Lys Glu Gly Gly Thr 405 410 415	1248
gct tct gtt gcc acc ggg cca gac tcc ccg tcc ccc gtg cct ttg ccc Ala Ser Val Ala Thr Gly Pro Asp Ser Pro Ser Pro Val Pro Leu Pro 420 425 430	1296
cca ggc aaa cca gcc cta cct ggg gcc gac ggg acc ccc ttt ggc tgt Pro Gly Lys Pro Ala Leu Pro Gly Ala Asp Gly Thr Pro Phe Gly Cys 435 440 445	1344
ccg ccc ggg cgc aaa gag aag cca tct gat ccc gtc gag tgg acc gtg Pro Pro Gly Arg Lys Glu Lys Pro Ser Asp Pro Val Glu Trp Thr Val 450 455 460	1392
atg gat gtc gtc gaa tat ttt act gag gct gga ttc ccg gag cag gcg Met Asp Val Val Glu Tyr Phe Thr Glu Ala Gly Phe Pro Glu Gln Ala 465 470 475 480	1440
aca gct ttc caa gag cag gaa att gat ggc aaa tct ttg ctg ctc atg	1488

T02TET "625200T

Thr Ala Phe Gln Glu Gln Glu Ile Asp Gly Lys Ser Leu Leu Leu Met
 485 490 495
 cag cgc aca gat gtg ctc acc ggc ctg tcc atc cgc ctc ggg cca gcc 1536
 Gln Arg Thr Asp Val Leu Thr Gly Leu Ser Ile Arg Leu Gly Pro Ala
 500 505 510
 ctg aaa atc tac gag cac cac atc aag gtg ctt cag caa ggc cac ttt 1584
 Leu Lys Ile Tyr Glu His His Ile Lys Val Leu Gln Gln Gly His Phe
 515 520 525
 gag gat gat gac ccc gat ggc ttc tta ggc 1614
 Glu Asp Asp Asp Pro Asp Gly Phe Leu Gly
 530 535

 <210> 46
 <211> 1638
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (1)...(1638)

 <400> 46
 atg aag aac caa gac aaa aag aac ggg gct gcc aaa caa tcc aat cca 48
 Met Lys Asn Gln Asp Lys Lys Asn Gly Ala Ala Lys Gln Ser Asn Pro
 1 5 10 15
 aaa agc agc cca gga caa ccg gaa gca gga ccc gag gga gcc cag gag 96
 Lys Ser Ser Pro Gly Gln Pro Glu Ala Gly Pro Glu Gly Ala Gln Glu
 20 25 30
 cgg ccc agc cag gcg gct cct gca gta gaa gca gaa ggt ccc ggc agc 144
 Arg Pro Ser Gln Ala Ala Pro Ala Val Glu Ala Glu Gly Pro Gly Ser
 35 40 45
 agc cag gct cct cgg aag ccg gag ggt gct caa gcc aga acg gct cag 192
 Ser Gln Ala Pro Arg Lys Pro Glu Gly Ala Gln Ala Arg Thr Ala Gln
 50 55 60
 tct ggg gcc ctt cgt gat gtc tct gag gag ctg agc cgc caa ctg gaa 240
 Ser Gly Ala Leu Arg Asp Val Ser Glu Glu Leu Ser Arg Gln Leu Glu
 65 70 75 80
 gac ata ctg agc aca tac tgt gtg gac aat aac cag ggg ggc ccc ggc 288
 Asp Ile Leu Ser Thr Tyr Cys Val Asp Asn Asn Gln Gly Gly Pro Gly
 85 90 95
 gag gat ggg gca cag ggt gag ccg gct gaa ccc gaa gat gca gag aag 336
 Glu Asp Gly Ala Gln Gly Glu Pro Ala Glu Pro Glu Asp Ala Glu Lys
 100 105 110
 tcc cgg acc tat gtg gca agg aat ggg gag cct gaa cca act cca gta 384
 Ser Arg Thr Tyr Val Ala Arg Asn Gly Glu Pro Glu Pro Thr Pro Val
 115 120 125

100352312401

gtc aat gga gag aag gaa ccc tcc aag ggg gat cca aac aca gaa gag Val Asn Gly Glu Lys Glu Pro Ser Lys Gly Asp Pro Asn Thr Glu Glu 130 135 140	432
atc cgg cag agt gac gag gtc gga gac cga gac cat cga agg cca cag Ile Arg Gln Ser Asp Glu Val Gly Asp Arg Asp His Arg Arg Pro Gln 145 150 155 160	480
gag aag aaa aaa gcc aag ggt ttg ggt aag gag atc acg ttg ctg atg Glu Lys Lys Lys Ala Lys Gly Leu Gly Lys Glu Ile Thr Leu Leu Met 165 170 175	528
cag aca ttg aat act ctg agt acc cca gag gag aag ctg gct gct ctg Gln Thr Leu Asn Thr Leu Ser Thr Pro Glu Glu Lys Leu Ala Ala Leu 180 185 190	576
tgc aag aag tat gct gaa ctg ctg gag gag cac cgg aat tca cag aag Cys Lys Lys Tyr Ala Glu Leu Glu Glu His Arg Asn Ser Gln Lys 195 200 205	624
cag atg aag ctc cta cag aaa aag cag agc cag ctg gtg caa gag aag Gln Met Lys Leu Leu Gln Lys Lys Gln Ser Gln Leu Val Gln Glu Lys 210 215 220	672
gac cac ctg cgc ggt gag cac agc aag gcc gtc ctg gcc cgc agc aag Asp His Leu Arg Gly Glu His Ser Lys Ala Val Leu Ala Arg Ser Lys 225 230 235 240	720
ctt gag agc cta tgc cgt gag ctg cag cgg cac aac cgc tcc ctc aag Leu Glu Ser Leu Cys Arg Glu Leu Gln Arg His Asn Arg Ser Leu Lys 245 250 255	768
gaa gaa ggt gtg cag cgg gcc cgg gag gag gag gag aag cgc aag gag Glu Glu Gly Val Gln Arg Ala Arg Glu Glu Glu Glu Lys Arg Lys Glu 260 265 270	816
gtg acc tcg cac ttc cag gtg aca ctg aat gac att cag ctg cag atg Val Thr Ser His Phe Gln Val Thr Leu Asn Asp Ile Gln Leu Gln Met 275 280 285	864
gaa cag cac aat gag cgc aac tcc aag ctg cgc caa gag aac atg gag Glu Gln His Asn Glu Arg Asn Ser Lys Leu Arg Gln Glu Asn Met Glu 290 295 300	912
ctg gct gag agg ctc aag aag ctg att gag cag tat gag ctg cgc gag Leu Ala Glu Arg Leu Lys Lys Leu Ile Glu Gln Tyr Glu Leu Arg Glu 305 310 315 320	960
gag cat atc gac aaa gtc ttc aaa cac aag gac cta caa cag cag ctg Glu His Ile Asp Lys Val Phe Lys His Lys Asp Leu Gln Gln Gln Leu 325 330 335	1008
gtg gat gcc aag ctc cag cag gcc cag gag atg cta aag gag gca gaa Val Asp Ala Lys Leu Gln Gln Ala Gln Glu Met Leu Lys Glu Ala Glu 340 345 350	1056

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gag cgg cac cag cgg gag aag gat ttt ctc ctg aaa gag gca gta gag 1104
 Glu Arg His Gln Arg Glu Lys Asp Phe Leu Leu Lys Glu Ala Val Glu
 355 360 365

 tcc cag agg atg tgt gag ctg atg aag cag caa gag acc cac ctg aag 1152
 Ser Gln Arg Met Cys Glu Leu Met Lys Gln Gln Glu Thr His Leu Lys
 370 375 380

 caa cag ctt gcc cta tac aca gag aag ttt gag gag ttc cag aac aca 1200
 Gln Gln Leu Ala Leu Tyr Thr Glu Lys Phe Glu Glu Phe Gln Asn Thr
 385 390 395 400

 ctt tcc aaa agc agc gag gta ttc acc aca ttc aag cag gag atg gaa 1248
 Leu Ser Lys Ser Ser Glu Val Phe Thr Thr Phe Lys Gln Glu Met Glu
 405 410 415

 aag atg act aag aag atc aag aag ctg gag aaa gaa acc acc atg tac 1296
 Lys Met Thr Lys Lys Ile Lys Lys Leu Glu Lys Glu Thr Thr Met Tyr
 420 425 430

 cgg tcc cgg tgg gag agc agc aac aag gcc ctg ctt gag atg gct gag 1344
 Arg Ser Arg Trp Glu Ser Ser Asn Lys Ala Leu Leu Glu Met Ala Glu
 435 440 445

 gag aaa aca gtc cgg gat aaa gaa ctg gag ggc ctg cag gta aaa atc 1392
 Glu Lys Thr Val Arg Asp Lys Glu Leu Glu Gly Leu Gln Val Lys Ile
 450 455 460

 caa cgg ctg gag aag ctg tgc cgg gca ctg cag aca gag cgc aat gac 1440
 Gln Arg Leu Glu Lys Leu Cys Arg Ala Leu Gln Thr Glu Arg Asn Asp
 465 470 475 480

 ctg aac aag agg gta cag gac ctg agt gct ggt ggc cag ggc tcc ctc 1488
 Leu Asn Lys Arg Val Gln Asp Leu Ser Ala Gly Gly Gln Gly Ser Leu
 485 490 495

 act gac agt ggc cct gag agg agg cca gag ggg cct ggg gct caa gca 1536
 Thr Asp Ser Gly Pro Glu Arg Arg Pro Glu Gly Pro Gly Ala Gln Ala
 500 505 510

 ccc agc tcc ccc agg gtc aca gaa gcg cct tgc tac cca gga gca ccg 1584
 Pro Ser Ser Pro Arg Val Thr Glu Ala Pro Cys Tyr Pro Gly Ala Pro
 515 520 525

 agc aca gaa gca tca ggc cag act ggg cct caa gag ccc acc tcc gcc 1632
 Ser Thr Glu Ala Ser Gly Gln Thr Gly Pro Gln Glu Pro Thr Ser Ala
 530 535 540

 agg gcc 1638
 Arg Ala
 545

<210> 47

<211> 550

<212> PRT

<213> *Oryctolagus cuniculus*

10023559 10701
 10023559 10701

<400> 47

Met	Ala	Gly	Pro	Pro	Ala	Leu	Pro	Pro	Pro	Glu	Thr	Ala	Ala	Ala	Ala		
1				5					10					15			
Thr	Thr	Ala	Ala	Ala	Ala	Ala	Ser	Ser	Ser	Ala	Ala	Ser	Pro	His	Tyr		
			20					25					30				
Gln	Glu	Trp	Ile	Leu	Asp	Thr	Ile	Asp	Ser	Leu	Arg	Ser	Arg	Lys	Ala		
		35					40					45					
Arg	Pro	Asp	Leu	Glu	Arg	Ile	Cys	Arg	Met	Val	Arg	Arg	Arg	His	Gly		
	50					55					60						
Pro	Glu	Pro	Glu	Arg	Thr	Arg	Ala	Glu	Leu	Glu	Lys	Leu	Ile	Gln	Gln		
65					70					75				80			
Arg	Ala	Val	Leu	Arg	Val	Ser	Tyr	Lys	Gly	Ser	Ile	Ser	Tyr	Arg	Asn		
			85						90					95			
Ala	Ala	Arg	Val	Gln	Pro	Pro	Arg	Arg	Gly	Ala	Thr	Pro	Pro	Ala	Pro		
			100					105					110				
Pro	Arg	Ala	Pro	Arg	Gly	Gly	Pro	Ala	Ala	Ala	Ala	Ala	Pro	Pro	Pro		
	115						120						125				
Thr	Pro	Ala	Pro	Pro	Pro	Pro	Pro	Ala	Pro	Val	Ala	Ala	Ala	Ala	Ala		
	130					135					140						
Pro	Ala	Arg	Ala	Pro	Arg	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Thr	Ala		
145					150					155					160		
Pro	Pro	Ser	Pro	Gly	Pro	Ala	Gln	Pro	Gly	Pro	Arg	Ala	Gln	Arg	Ala		
				165					170					175			
Ala	Pro	Leu	Ala	Ala	Pro	Pro	Pro	Ala	Pro	Ala	Ala	Pro	Pro	Ala	Ala		
		180						185					190				
Ala	Pro	Pro	Ala	Gly	Pro	Arg	Arg	Ala	Pro	Pro	Pro	Ala	Ala	Ala	Val		
	195						200					205					
Ala	Ala	Arg	Glu	Ser	Pro	Leu	Pro	Pro	Pro	Pro	Gln	Pro	Pro	Ala	Pro		
	210					215					220						
Pro	Gln	Gln	Gln	Gln	Gln	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Gln	Gln	Pro		
225					230					235					240		
Gln	Pro	Pro	Pro	Glu	Gly	Gly	Ala	Ala	Arg	Ala	Gly	Gly	Pro	Ala	Arg		
				245					250					255			
Pro	Val	Ser	Leu	Arg	Glu	Val	Val	Arg	Tyr	Leu	Gly	Gly	Ser	Ser	Gly		
		260						265					270				
Ala	Gly	Gly	Arg	Leu	Thr	Arg	Gly	Arg	Val	Gln	Gly	Leu	Leu	Glu	Glu		
	275						280					285					
Glu	Ala	Ala	Ala	Arg	Gly	Arg	Leu	Glu	Arg	Thr	Arg	Leu	Gly	Ala	Leu		
	290					295					300						
Ala	Leu	Pro	Arg	Gly	Asp	Arg	Pro	Gly	Arg	Ala	Pro	Pro	Ala	Ala	Ser		
305					310					315					320		
Ala	Arg	Ala	Ala	Arg	Asn	Lys	Arg	Ala	Gly	Glu	Glu	Arg	Val	Leu	Glu		
				325					330					335			
Lys	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Asp	Asp	Glu	Asp	Asp	Asp	Asp		
		340						345				350					
Asp	Val	Val	Ser	Glu	Gly	Ser	Glu	Val	Pro	Glu	Ser	Asp	Arg	Pro	Ala		
	355						360					365					
Gly	Ala	Gln	His	His	Gln	Leu	Asn	Gly	Gly	Glu	Arg	Gly	Pro	Gln	Thr		
	370					375					380						
Ala	Lys	Glu	Arg	Ala	Lys	Glu	Trp	Ser	Leu	Cys	Gly	Pro	His	Pro	Gly		
385					390					395					400		
Gln	Glu	Glu	Gly	Arg	Gly	Pro	Ala	Ala	Gly	Ser	Gly	Thr	Arg	Gln	Val		
				405					410					415			
Phe	Ser	Met	Ala	Ala	Leu	Ser	Lys	Glu	Gly	Gly	Ser	Ala	Ser	Ser	Thr		
		420						425					430				
Thr	Gly	Pro	Asp	Ser	Pro	Ser	Pro	Val	Pro	Leu	Pro	Pro	Gly	Lys	Pro		

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435 440 445
 Ala Leu Pro Gly Ala Asp Gly Thr Pro Phe Gly Cys Pro Ala Gly Arg
 450 455 460
 Lys Glu Lys Pro Ala Asp Pro Val Glu Trp Thr Val Met Asp Val Val
 465 470 475 480
 Glu Tyr Phe Thr Glu Ala Gly Phe Pro Glu Gln Ala Thr Ala Phe Gln
 485 490 495
 Glu Gln Glu Ile Asp Gly Lys Ser Leu Leu Leu Met Gln Arg Thr Asp
 500 505 510
 Val Leu Thr Gly Leu Ser Ile Arg Leu Gly Pro Ala Leu Lys Ile Tyr
 515 520 525
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 530 535 540
 Pro Glu Gly Phe Leu Gly
 545 550

<210> 48
 <211> 2561
 <212> DNA
 <213> *Oryctolagus cuniculus*

<220>
 <221> CDS
 <222> (246) ... (1895)

<400> 48
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 ttctctctct tttttttttt ttgtcaaaga aacagcagcg ccgcccgcgc tccgccgagg 120
 cgctgcgccc ccgccccggg ggagggcgag gaggcgggca gcggcgagg gaggggagcc 180
 ggggaggggg gcgcccgcgt gggagggagg cagcgcgcac ggtgcagccg ggccccggcg 240
 gaggc atg gcg ggg ccc ccg gcc cta ccc ccg ccg gag acg gcg gcg gcc 290
 Met Ala Gly Pro Pro Ala Leu Pro Pro Pro Glu Thr Ala Ala Ala
 1 5 10 15

 gcc acc acg gcc gcg gcc gcc gcc tgc tgc tcc gcc gct tcc ccg cac 338
 Ala Thr Thr Ala Ala Ala Ala Ser Ser Ser Ala Ala Ser Pro His
 20 25 30

 tac caa gag tgg att ctg gac acc atc gac tgc ctg cgc tgc cgc aag 386
 Tyr Gln Glu Trp Ile Leu Asp Thr Ile Asp Ser Leu Arg Ser Arg Lys
 35 40 45

 gcg cgg ccg gac ctg gag cgc atc tgc cgg atg gtg cgg cgg cgg cac 434
 Ala Arg Pro Asp Leu Glu Arg Ile Cys Arg Met Val Arg Arg Arg His
 50 55 60

 ggc ccg gag ccg gag cgc acg cgc gcc gag ctc gag aaa ctg atc cag 482
 Gly Pro Glu Pro Glu Arg Thr Arg Ala Glu Leu Glu Lys Leu Ile Gln
 65 70 75

 cag cgc gcc gtg ctc cgg gtc agc tac aag ggg agc atc tgc tac cgc 530
 Gln Arg Ala Val Leu Arg Val Ser Tyr Lys Gly Ser Ile Ser Tyr Arg
 80 85 90 95

 aac gcg gcg cgc gtc cag ccg ccc cgg cgc gga gcc acc ccg ccg gcc 578
 Asn Ala Ala Arg Val Gln Pro Pro Arg Arg Gly Ala Thr Pro Pro Ala
 100 105 110

1002559 "J2121"

ccg ccg cgc gcc ccc cgc ggg ggc ccc gcc gcc gcc gcc gcg ccg ccg Pro Pro Arg Ala Pro Arg Gly Gly Pro Ala Ala Ala Ala Ala Pro Pro 115 120 125	626
ccc acg ccc gcc ccg ccg ccg ccg ccc gcg ccc gtc gcc gcc gcc gcc Pro Thr Pro Ala Pro Pro Pro Pro Pro Ala Pro Val Ala Ala Ala Ala 130 135 140	674
gcc ccg gcc cgg gcg ccc cgc gcg gcc gcc gcc gcc gct gcc gcc aca Ala Pro Ala Arg Ala Pro Arg Ala Ala Ala Ala Ala Ala Ala Thr 145 150 155	722
gcg ccc ccc tcg ccc ggc ccc gcg cag ccg ggc ccc cgc gcg cag ccg Ala Pro Pro Ser Pro Gly Pro Ala Gln Pro Gly Pro Arg Ala Gln Arg 160 165 170 175	770
gcc gcg ccc ctg gcc gcg ccg ccg ccc gcg ccc gcc gct ccc ccg gcg Ala Ala Pro Leu Ala Ala Pro Pro Pro Ala Pro Ala Ala Pro Pro Ala 180 185 190	818
gcg gcg ccc ccg gcc ggc ccg cgc cgc gcc ccc ccg ccc gcc gcc gcc Ala Ala Pro Pro Ala Gly Pro Arg Arg Ala Pro Pro Pro Ala Ala Ala 195 200 205	866
gtc gcc gcc ccg gag tcg ccg ctg ccg ccg cca cag ccg ccg gcg Val Ala Ala Arg Glu Ser Pro Leu Pro Pro Pro Pro Gln Pro Pro Ala 210 215 220	914
ccg cca cag cag cag cag cag ccg ccg ccg cca ccg ccg ccg cag cag Pro Pro Gln Gln Gln Gln Gln Pro Pro Pro Pro Pro Pro Pro Gln Gln 225 230 235	962
cca cag ccg ccg ccg gag ggg ggc gcg gcg ccg gcc ggc ggc ccg gcg Pro Gln Pro Pro Pro Glu Gly Gly Ala Ala Arg Ala Gly Gly Pro Ala 240 245 250 255	1010
ccg ccc gtg agc ctg ccg gaa gtc gtg cgc tac ctc ggg ggt agc agc Arg Pro Val Ser Leu Arg Glu Val Val Arg Tyr Leu Gly Gly Ser Ser 260 265 270	1058
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